

1/20

Figure 1

	-----Intron 5' to $\beta 2.6$ -----		
1	M E E Y L A E P R E F V C E V E P L		18
1	TTCCCTAAATGGGAGAATACCTCGCTGAACCCCGCGGGTTTGTGTGTGGGGTTGAGCCTC		60
	----- $\beta 2.6$ ----- -----C $\beta 2$ ----->		
19	C S Y E Q Y F E P E T R L T V L E D L R		38
61	TGTGCTCCTATGAACAGTACTTCGGTCCCGGCACCAGGCTCACGGTTTTAGAGGATCTGA		120
39	N V T F P K V S L F E P S K A E I A N K		58
121	GAAATGTGACTCCACCCAAGGTCTCCTTGTGAGCCATCAAAAGCAGAGATTGCAACA		180
59	Q K A T L V C L A R G F F P D H V E L S		78
181	AACAAAAGGCTACCTCGTGTGCTTGCCAGGGGCTTCTTCCCTGACCACGTGGAGCTGA		240
79	W W V N G K E V H S G V S T D P Q A Y K		98
241	GCTGGTGGGTGAATGGCAAGGAGGTCCACAGTGGGTGAGCAGGACCCCTCAGGCCTACA		300
99	E S N Y S Y C L S S R L R V S A T F W H		118
301	AGGAGAGCAATTATAGCTACTGCTGAGCAGCCGCTGAGGGTCTCTGCTACCTTCTGGC		360
119	N P R N H F R C Q V Q F H G L S E E D K		138
361	ACAATCCTCGAAACCACTTCCGCTGCCAAGTGCAGTTCCATGGGCTTTCAGAGGAGGACA		420
139	W P E G S P K P V T Q N I S A E A W G R		158
421	AGTGGCCAGAGGGCTCACCCAAACCTGTACACAGAACATCAGTGCAGAGGCTGGGGCC		480
159	A D C G I T S A S Y H Q G V L S A T I L		178
481	GAGCAGACTGTGGAATCACTTCAGCATCCTATCATCAGGGGTTCTGTCTGCAACCATCC		540
179	Y E I L L G K A T L Y A V L V S G L V L		198
541	TCTATGAGATCCTACTGGGGAAGGCCACCCCTATATGCTGTGCTGGTCAGTGGCCTGGTGC		600
199	M A M V K K K N S *		208
601	TGATGGCCATGGTCAAGAAAAAAATTCTGAGACAAACTTTTATGCATCCTGAGCCGTT		660
661	CTTCACCCTGGCCATAGATTTTCTGCACCTTCTCTAATTCCTGTTTCTAAGAACTTGTG		720
721	TCTTCTTCTCCTCCATGGATATCCATGCTTCTGTTGACACCTTGACTCTGAAA		773

Figure 2

Figure 2A

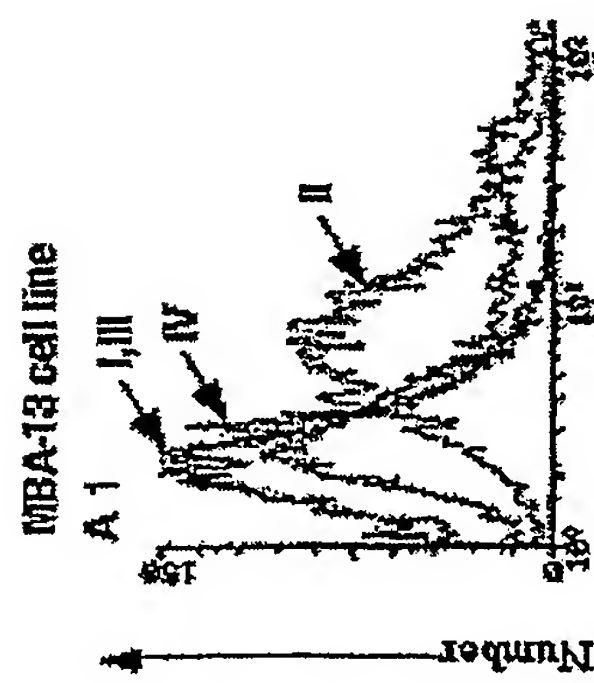


Figure 2B

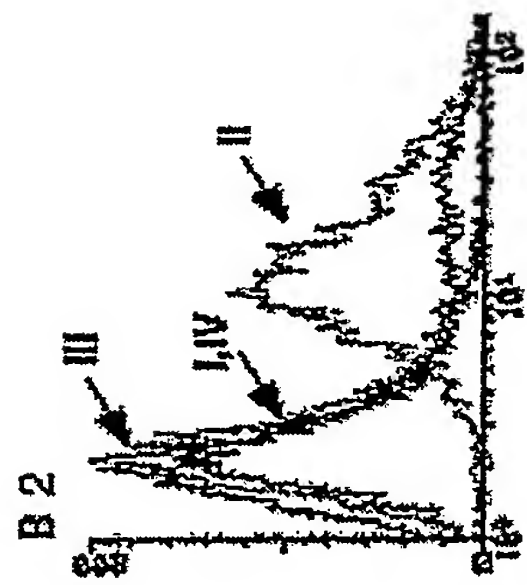


Figure 2C

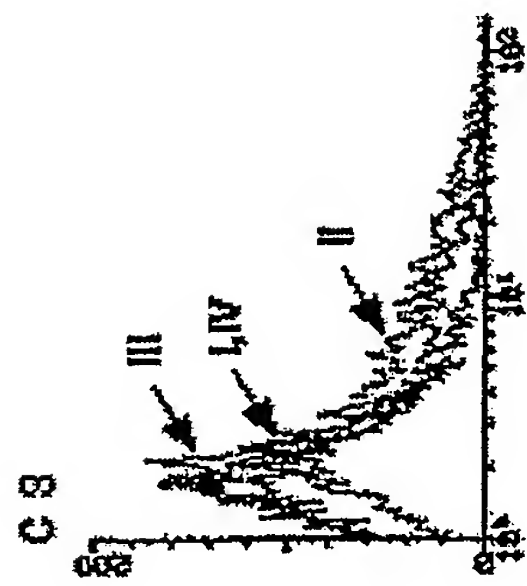


Figure 2D

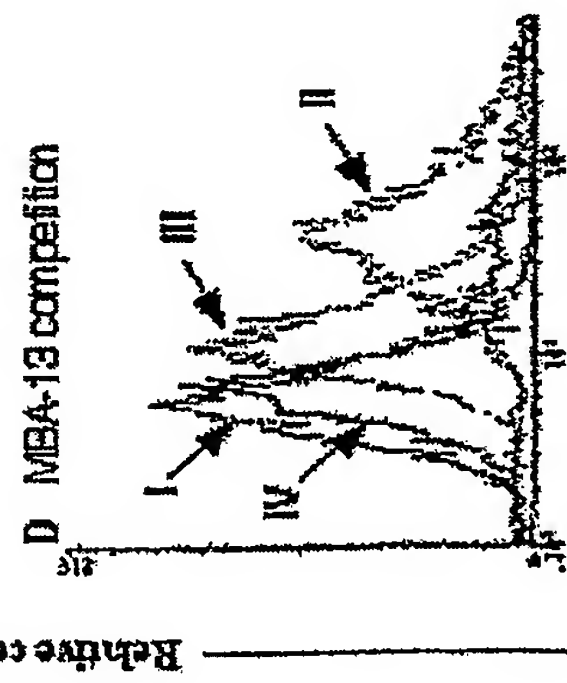


Figure 2E

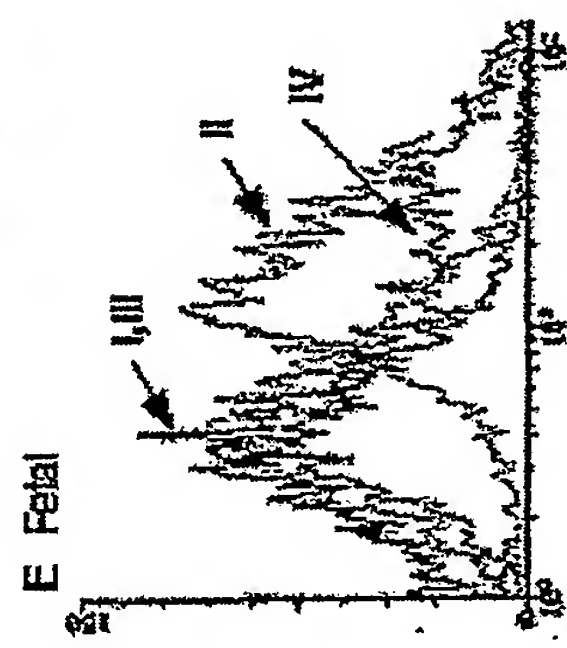


Figure 2F

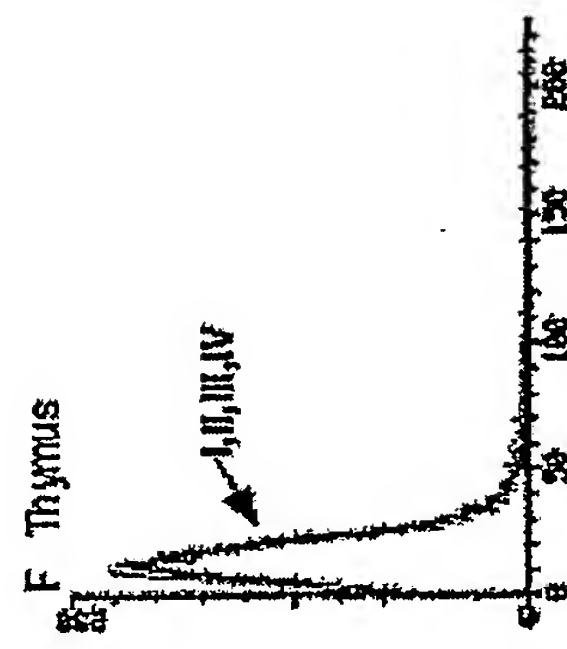


Figure 2D

Figure 2E

Figure 2F

Figure 3

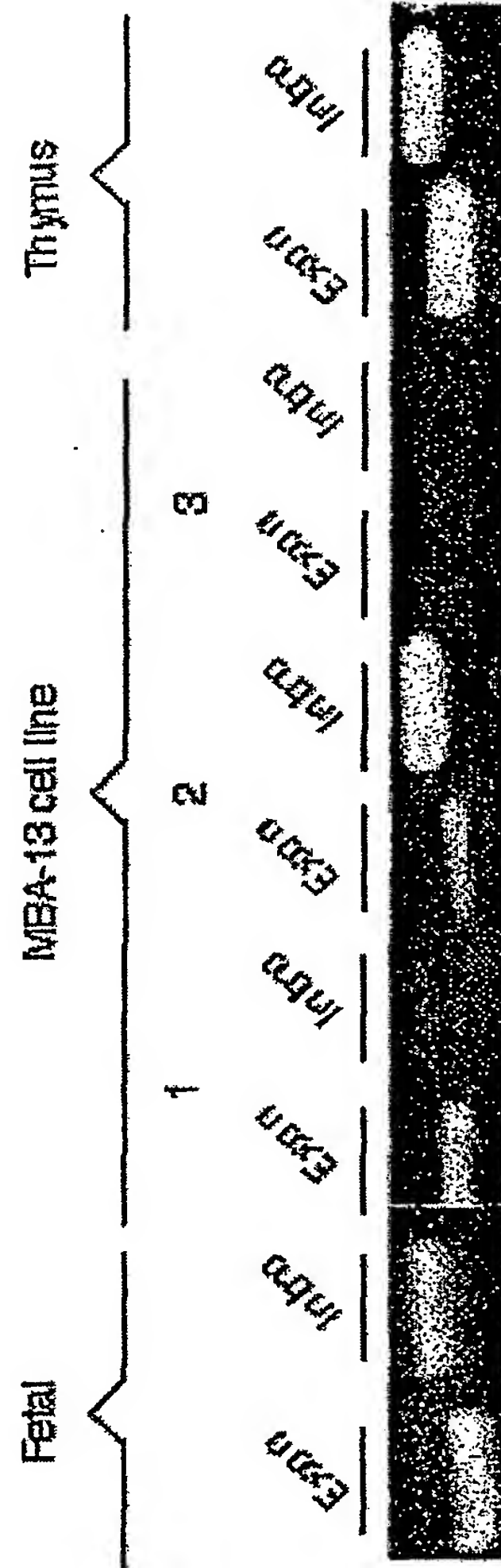


Figure 4

Sequences of intronic J β sequences containing Met:(Met: bold; J β exon: italics)

J β 2.1 KGSREVEPPFSPYHVNHQQSIRTCMGNYELIKKH Stop V E
 K Stop TLCGKEVTSPFSLEATWTPTGSLQISNSLCQTLSE
 Stop MDIRSQAKSGISSIS Stop DRPHARSRLPYQFWR Stop M
 ENVSNPGSCIEEGEERGRILGSPFLLCNYAE**QFFGPGT**
RLTVL

J β 2.6 ELLGNCSGEFWGFWRLYPEFPSRALEREAE Stop QGDFP
 Stop MGEYLAEPGRGFVCGVEPLC**SYEQYFGPGTRLTVL**....

Sequences of intronic J α sequences containing Met:

J α TA31 VSKKKKKKKSVTIL Stop NSEPAEGAINSSLLGSLDP
 G Stop NVLEHCTGLLPSPKDDP Stop CQDRSSFLWGGGQWIFAVI
 VFCLAHSPRLW Stop PETSPQSTTQEQRVKG Stop LN
 Stop GERDIGHVTRRNFTQKKNCHLGRC Stop SVSMAEVT
 PPPCPRLVSQLRHGH Stop QKGGFLSSLKTNLAESHLPSS
 PNEPVVSVDALGSVRRVFAVAEGSRLTRRARWGRTRYRG
 WTEASPC LHSSCAA Stop SSCGF Stop TGGRGGWGRGAIPK
 AVACFGICSGLLCLPPWERTHLASRLDVAGQEDTGVG
 GNSFRGEGERGGRTVVEGVTGGSMSRM Stop SE Stop VKFK
 KLEIKNKKQGRGLQKVYRAGTVDFVMAWHTV**ANYGNEK**
ITFGAGTKLTIKP....

J α TA46 Stop VFLPGRWEPK Stop EVDRDISNPPCKPLV Stop LPT
 VDTV Stop TI Stop RTLSHIDEGSDVVHT Stop EDSRDLSLVTVSDC
 MPIVVHSRVQQTKDRDIKIRWTLS Stop PHLCNQMIFTGSLAN
 GCVA Stop SLTISPLLSPWLSFGSLSLT Stop NLK Stop
 SIY Stop IIRFLGCITHKKMTSRHININPEERGQRALSQT
 CSELNLTTPCFNQLASAYDQLRQRATDRKWSSRHHLTR
 AL Stop PHQR Stop YFRVQESFPQAGWLERGHGSALRQAME
 AGWEVQHWVSDMECLTVV**TGSGGKLT**LGAGTRLQVNL...

Figure 4 cont.

JαNew05 Stop VKD Stop GYPKTK Stop VCGFAVLCSFGGCMSPPR
 SLCITLMGLC Stop LMKSGHSDLDDEEVIIITAFFHY Stop LRI Stop
 RSA Stop R Stop FINVRLMFVLR Stop Y Stop KPNN SKIRLS
 SVT Stop THIH THSH THIL THWHNHTHTHTLSQSHTHTHS
 HTSTITHTLTQPHTHSLSLSLSLSLSLSLSLSLSLSLPRQ
 CNCIWFP SRNGCCVCLT Stop DMQSYQLVSWLGFCYC Stop
 FSVKTL PVKEAWCYQP Stop SCHYSNHIYT Stop PFYYFIS
 LKLAQLIRIQCWGNKTS GF Stop SSSE Stop LHSQLLVLRG
 CSKPSQTLGTKAARRKASTRGEDDVAFLGLPLGPSCLL
 VIVRPQMTVNSGGSSNAKLTFGKGTKLSVKS....

JαS58 WV Stop RFHVTAVALCSF Stop TSLLHLF Stop LETLGFR
 LSFLFKKQSL Stop SK Stop QDLLCLLSFHIVTKAGRICSKLGLRL
 LAKVEWM Stop V Stop LVYRKERFVLLFF Stop P Stop Stop YS
 KVKATT VASKVLQAWSVLQGETWGNWLT FHGKTGMLFV
 VGLLLLLLLSSLSLSLKET Stop YNTF Stop LSGFE Stop LGIQ
 MCITCSWQGSRAVVLNLPNVVAPSPPKTIKLFCCYFIA
 VTLLLL Stop IGM Stop ISYMQLI Stop YATPVKGSLNPQRRS
 ALQDES RCCRGRWSTVSNVRGAIELGRNTMPTFEEKKN
 SSLGLEQD Stop PLFLVSPLEKKPFICNGLSRLMSF
 Stop MRFHVLT Stop Stop DSLGRRSLLPLQV Stop Stop VF Stop D
 Stop VGNVNCTAKIRRAGINSQPLLMLSL Stop NRNQIRML
 SSV CVHTPPRAS Stop FD Stop CQ Stop LIQIFRHLSEQTSLG
 SLCLN Stop LSRYLHNCQICFTLCCIDSA Stop Stop KQMRLC
 FPRSFSPRRSSLPPSK Stop HLFTQREDVQRVT Stop LIAA
 ASHL YDSL PWKRLKH FIRLIS Stop TD Stop QPN Stop EERN
 RF Stop ASFLWLQFQATHLEHLVRHLRNTGARREVVS LCG
 LVFLSCTENFTQEEESK Stop VEN Stop QPGIHMYTKQS Stop
 ASALSGSTVWFPHSPTAPFISNTYIILFSFSFEFLSA
 MP SHNPSTYHCLSNPRMDGSGTGRVLFSGPSAEPLKKC
 RLYPSS Stop VATRRLGRGQDEEK PQESGTASLW Stop YIR
 LNLLSGLKCF SFHLEPMCGSEEVFVVESATVADRLCKC
 ADIWIWHKSHSMST....

JαNew06 KCVFSCSLGLEQYCSLHPQIFSRRIQCLALQTLPV
 Stop PLKGSYSFF Stop K Stop HRRIPFNVANCGGD Stop TAQGPNLCS
 SLL Stop GQLCLLSHR Stop TSESGGLFPSLAFPVDEVVL
 STNFIVKDTHDRQLLPYFSLNKFFLC Stop Stop L Stop QHIS
 ANEFLVIQINSSVT Stop TVASYPIIQNSLTHHSAAAHCA
 SSNPDLHASSNKA KRMACYQMYFTGRKVDEPSELGSGL
 ELSYFHTGGSSQAVGLFIENMISTSHGHFQEMQFSIWS
 FTVLQISAPGSHLVPETERAEGPGVFVEHDITVSSNTN
 KVVFGTGTRLQVLP....

Figure 4 cont. (2)

JαNew08 Stop VMFHFLMF Stop NSLPLS Stop RCSECRVGKLMHMLG
 HGGQHSCTGYSTAQPDTTSPTTGETAPTLPDPTKIFLIVYLI
 Stop RAKGKIKKLC PESILKSPRPSPPYPH Stop SPADCK
 FNVIFGSY Stop K Stop Stop GFLCLMTPTVSLPSFIKGLLFC
 VWPLLASWFCPHAPLCLFQGWAGDNSFKSHFDVTDNRD
 KVLAKCNTAHGVFSRHTTSQLFSSVQKHGHSYLM SAIY
 SDTAKCSFKAGTRDFLWDLFLRLTMGWAFSGSSEMP SW
 IPALPMEILWSG Stop TAKPDMFLLYRLLQGLEIRTLREN
 KSFG Stop MGRLLDGSIRKRND Stop QEERP K KNTGQALGW
 GGVGMSRKMVTVG IQEAGSLS Stop EGKQGFL Stop LKVPS
 QLSNLNQQGHLPFP SDFPVHVGMPLPPTMVC Stop EVGRG
 IDQEYV Stop HS Stop GPLFKHETPESVRGAKSLGPRREM Q
 QSNSSQQVWRSTEQDPVLALCLTPLASPDHTAHPSSFS
 Stop PQESKVL DREPEIP Stop PGQVQKGWSGAQGWFLKTL
 WIS I Stop FLIYNKF Stop LS Stop VIRKMFL L Stop TIPVK GK
 DNIYRGPLLRCQFP PWASMW WGLILSASVKFLQRKEIL
 CLPGTGSNRLTFGKGTKFSLIP...

JαLB2A Stop VIVTHPLC Stop IPPTRSIFALSSSL Stop LGSLSNVVS
 VTPCPYLLSRYKWSKQILGFH Stop HSETDNCVLDILQKEGFQS
 KGS HYFY Stop LTHKEAGDNWKVPGEYLGFQKADMAQCMHS
 Stop KIP Stop LTFIEYLLYACVNAPCTL SHLRG Stop W
 LWGRFYPTFKGKVEIVTKWLRENGGPS Stop TSSRPGCPH
 CGLSQPGSC Stop GLYRMK Stop PVVLVTTSSVLSQ Stop P
 Stop CL Stop EQGVR Stop DSLCFLDSDTLKQNGECVHEQFHS
 GSMVNGQ Stop TNLKRSSLWLES Stop PFSTPLSSLPTFLS
 SWTFISGKPLHRCLC Stop Stop RSQIKN Stop ERLSPGHTKN
 LRR Stop LFFQYLKN SCVDNGRG Stop HQRQNQKQ Stop MKRR
 PSFSGMLLNGAVGGQAPL Stop SLESALQGLHSGSSGLRW
 RALWKEFLWHFRLWISCELEVLRPHDPSIEDKRVGYIC
 FFLFLLF Stop Stop PRNRPSNCSQAEAYRDFFTLRR Stop RT
 MISQCSKWGKKRREREREREREREREREREREREREREREM P Stop
 RRARG Stop TKEVG Stop LCRGQI Stop SIEVFISSALE Stop N
 PSIM Stop VLVTEAVF Stop TGKQDQGSEGLPI Stop TLSKGC
 VIAF Stop Stop ERTLAVERLLLPQIICLLRCSL Stop RKSDC
 LP Stop LLGAWGKDLGKL RADRRSFSALHSQARERGWGMV
 GADLCKGGWHCVDRGSALGR LHFGAGTQLIVIP...

Figure 4 cont. (3)

JαDK1 Stop V C L F L W I P N L I H C Stop D K C K L F R H V S G V S T V P I H
 P D I T G S K V P S H A F P V L T R K T G S S L Y C W Q A Q Stop G S R L E D A S D
 A Q Q P A W D C P G R E S C S E M P S S L P L G I I L Stop L S S P T Stop
 A R P C L S V A Y S I P A S H T C G C A N I L I E A S G R S Stop G S S M L L
 F Stop G K A S H Stop Stop S K A G Stop L D S P P P K S L H I P G S G L Q V
 Q T T M L V F V Stop V L D M E P G C A C L Q G K H F I G Stop A I S L A H L
 P V S I F F Stop E R I S W Stop Y S H L V H R Q K D D V D V P R W H T V I W
 S Q A L I F P P S I F R C L S V K V I S S S M S P G G R L A C C P S S A V A
 W M A S S C Y P T Stop L Stop C I P I I H L T L Y V Y L L F P Y S Stop M Y C
 H A T V M L F I V S S V S S V V P I Stop T K I Q R P N C L P C L K I I V L E
 K K L E F C C C L Y R H Stop E L R S L A V A R T G Y D F C S V Stop L H T P
 Stop V Stop M R E P V K N L Q G L V S L *C L P G R Q S S D I W N R N H G I S*
Q P.....

JαTA39 Stop V P D S W Stop L Stop R P P L S H S L Y H T D D H M P Y H S S K V
 E L G F N E E R N Stop M L L V V A V L H P M S H S M F I I T L I T S S D K R K F T R
 R T V T I C Stop T L V K M K V S T G A G A Y C N S G Y Q K D Q A L A R K K L N K
 Stop Stop V D L V K L L Q I F F K N Q Y V S E L T G E Y S A A I L S G F S Y S Y G T T
 V V E P C K R G F H G L N S M L S L Y S S N Q K G G I P S R
 T P K R E E S Stop M L I T S I Stop D H S R L S I F V R Q H G T T I Y N V F
 I W G T R H H Stop R D A Stop Stop G C Stop D P L N L P Q Y L Stop G T V V K
 E L M V H A D K H I P C M G K L S K Stop G C R T G C E Q D R S C R N P R N N
 S S R R A D P E E R A A Q L K H I Q V P Stop I C F D S C T G P A L S V K R K
 C L I I L H K L I Stop G Stop V N V C K N I L Q I L K C Y P H I K Y G S I K
 Q Q K I L K L G Q S Stop T L L R Stop R D G V C S C G S V A T G T G Stop K H
 P L S L M E V Y E L R V T L M E T G R E R S H F V K T S L T V *Q I L G L T R*
G L E L G Q N S K S F Q.....

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Figure 5

Homo sapiens beta gene segment

J β 2.3 (bases 198551 to 198627), containing [SEQ ID NO:17]

Met GLSAVGRTRAESGTAERAAPVFVLGLQAVSTD TQYFGPGT
RLTVLEDLKNVFPPEVAVFEPSEAEISHTQKATLVCLATGFY
PDHVELSWWVNGKEVHSGVSTDPQPLKEQPALNDSRYCLSS
RLRVSATFWQNPRNHFRCQVQFYGLSENDEWTQDRAKPV TQ
IVSAEAWGRADCGFTSESYQQGVLSATILYEILLGKATLYAV
LVSA LVL *Met* A *Met* VKRKDSRG Stop

Homo sapiens alpha gene segment

J α 2 (bases 84269 to 84334)

LLFK Stop Stop VGPVSLCNGVTYGM*Met* NTGGTIDKLTFGKGTHV
FIIS...

J α 3 (83376. To 83437), containing [SEQ ID NO:18]

LQGIEAA *Met* Stop REAHRPGENLGSTLTGCFQ Stop SLHFLSSK
Met TITTS Stop Stop YEIM*Met* AR *Met* Stop KVINK Stop Stop LF Stop NIIIIII
EALLILRFTLS Stop RERRIASLG NKRCKQQRPKFPFR*Met* LLWD
PSGFQQISIKKVISKTLPTVGVQQCFQDNLWIRDQTQHPA...

J α 6(79270 to 79331), containing [SEQ ID NO:19], [SEQ ID NO:20], [SEQ ID NO: 21]

QLQEKRRHIKFPLLSVLAALSEAPCIS Stop LKSSRARPS ECLPQA
SRVWCLYWGAGSRHGELLPCFSADGKVVFSPGYTGAKELSS
PQPLAPAPGLQHSGALRTAVGDFLQLREYSGGFPR*Met* LPNT
Met GQLVEGGH*Met* KQVLSKAVLTV CIRRK LHTYIWKRNPYC
SS ...

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Figure 5 cont.

Jα8(76346 to 76405), containing [SEQ ID NO:22]

SIHGHHSCKKHV Stop LTNS Stop VW Met VKLP Stop VLSRTETL Stop
LY Stop Stop LF Stop LEY Stop Stop HFYITQGIQSRIFSWVLSDLLSSS
NGLRKIKVK Stop Stop D Stop Met PPTTLVHACRHRNTLSN Stop LAC
DLAILA Met A Q Stop QGPILYRV Met SECEHRLSETCIWNWHPTS
GQS...

Jα9(75756 to 75816), containing [SEQ ID NO:23]

QYN Stop STRA Stop L LCEL Stop RNAG Stop RHFAHRTLALRDSLKIS
SSPLFIFPIRKL RP REVG Stop IV Stop GQCELGLGLEPGDPGP GAI
FDCCLVN Stop TSDR Stop EV Stop V Met LINRKNK Stop VLQGEYKN
VLLITSTLV Stop AP Stop TCSPAVV Stop KWKEKE Met AHFVAVQIT
VGNTGGFKTIFGAGTRLFVKA...

Jα11(72705 to 72765), containing [SEQ ID NO:24]

VNSGYSTLTFGKGTMMLLVSP
EHCY Stop SSDVWF Stop QKNPNIAVIPL Stop KEQGRGFFSESSS
Stop DLSILCQSVLWIQDTYIFVSSAGPTCSASDHLSLICK Met RI
IFKL Met AQLKPK Stop GSGIYADY Stop SIWLINEGFLSFSLCRSW
VEIPNTANHFC Met GICYSVNSGYSTLTFGKGTMMLLVSP...

Jα13(71282 to 71342), containing [SEQ ID NO:25]

D Stop KILES Stop S Stop RK RQKVWLSTSSSSDLA Stop LVNLGHSIF
IYK Met KTFNITSDFLF Stop FCGYIIGVYIYFKDKLIYVKVFCKF
LNAIHSENIICL Stop NKKNYVRFRILLT Stop EFVGS Stop Stop NSHL
HVICS PRHW Stop KALSLLKYS GSNATQ Met KRAGEGKSFCKG
RHYSVNSGGYQKVTFGIGTKLQVIP...

Jα14(70532 to 70583), containing [SEQ ID NO:26]

SYS Met LLKKF Stop LIEERKIIYKDMet SNLLNSGK Met RLCTGVD
S Stop VK Met GVRAAILWLVKQDYLVKLCKSPRKK Stop VSELSR
EYHLDCSQAFHYIYCTT Met VP Stop KEAFSGLIPWLSLYSSIKK
GESSQSSHEGDSC Met LTTLIYYQGNSVIFVRQHSAVIYSTFIFG
SGTRLSVKP...

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Figure 5 cont (2)

Jα24(60203 to 60265), containing [SEQ ID NO:27]

KTSSYLNDRATVVISCHLSSAEDWV Stop P Stop VNA Stop AGGFLS
LQHLKRTPLRLH Stop PQQSGFLPLPPGRCSSWHTPSLV S Stop KK
RN Stop KRKGEKLISHIMet *QLPHFVARLFPHEQFVFIQQLSSLGK*
PFCRGVCHSVTTDSWGKLQFGAGTQVVVTP...

Jα25(59046 to 59105)

QKDKASPLSLGRGQGCLSSQ
AQAGGRKL Stop GVFAEPRNTVGITMet VRILSLVPEPDCPCCPV
STVKWR Stop KMet SPVLDVGRSCRVL RPGVHRDLRSGDGEEG
Stop KRNEKQNHKDNTEEGFIFGKENHKA V Stop LTLEEMet HSF G
GSLRRALCRGKLS C Stop VFDAEIITMet QKDKASPLSLGRGQ
GCLSSQ...

Jα31(51207 to 51263), containing [SEQ ID NO:28]

ELGWLC SWKISLWV Stop ECTVPSNLCV Stop G Stop AHTYDSKSC
Stop QIRFSFGSF Met PRNAKEF Stop KLISLAFLKETLFALCCRAN
FSSYHKRPETQRKQKKKKKKKTQGESNCPLTTVLCVW Stop
GFTMet *GFSKGRKCCGNNNARL* Met *FGDGTQLVVKP...*

Jα36(45351 to 45411), containing [SEQ ID NO:29]

KLGA VSLTCNLSILEG Stop GRRIT Stop GQEFKTTLGNTVRPPSL
QKINK Stop NFFKNSQAW Stop HAPVILATEEVEAGGSLVPRRSR
LQ Stop AKNTPLHSSLDNKVRSCL Stop KYIFKNIK Stop IS Stop RRR
KEMet *KKIWLSRKVFLYWAETLCQTGANNLFFGTGTRLTVIP*
...

Jα40(39930 to 39990), containing [SEQ ID NO:30], [SEQ ID NO:31], [SEQ ID NO:32],
[SEQ ID NO:33]

NYKIMet SWVCLCGS Stop TGSRGES Stop Met EYFRGFNSHLDA Stop
VLICSLNQTL Stop LINMet HKDSMet RLKNFCKLGPNRSSSEDFLY
ELRYNPK Stop ITCRKIRGQGLS Met *GKVHV* Met *PLLF* Met *ESKAASI*
NGNIMet LVYVETHNTVTTSGTYKYIFGTGTRLKVLA...

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Figure 5 cont. (3)

Jα41(37899 to 37961), containing [SEQ ID NO:34], [SEQ ID NO:35]

QLLSLStop YLPPTFTLEPHRIVSVHAPGCSQSRPARRSAGHRK
TPDFITCHRAPSLRWQISILITHITVGSGDLVSNGLMetEEGSFI
YTIKGPWMetTHSLCDDCCVIGFQTLALIGIIGEGTWWLLQGVFCL
GRTHCGTQIPGMHSTSAKAPRCWSHP...

Jα44(35064 to 35126), containing [SEQ ID NO:36]

LGPITHQVStop QEGFIKIKPRNRKDKEFNSQCLQSStop TStop QLL
SLNHLVSTPStop PTEVKEGNQQVMetLVKStop VSGQSQLPSStop E
LILWSLGKGNASVRAHPGCPSGRDHGESSEStop GSEHQMetES
QATGFCYEASHSVNTGTASKLTFGTGTRLQVTL...

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Figure 6

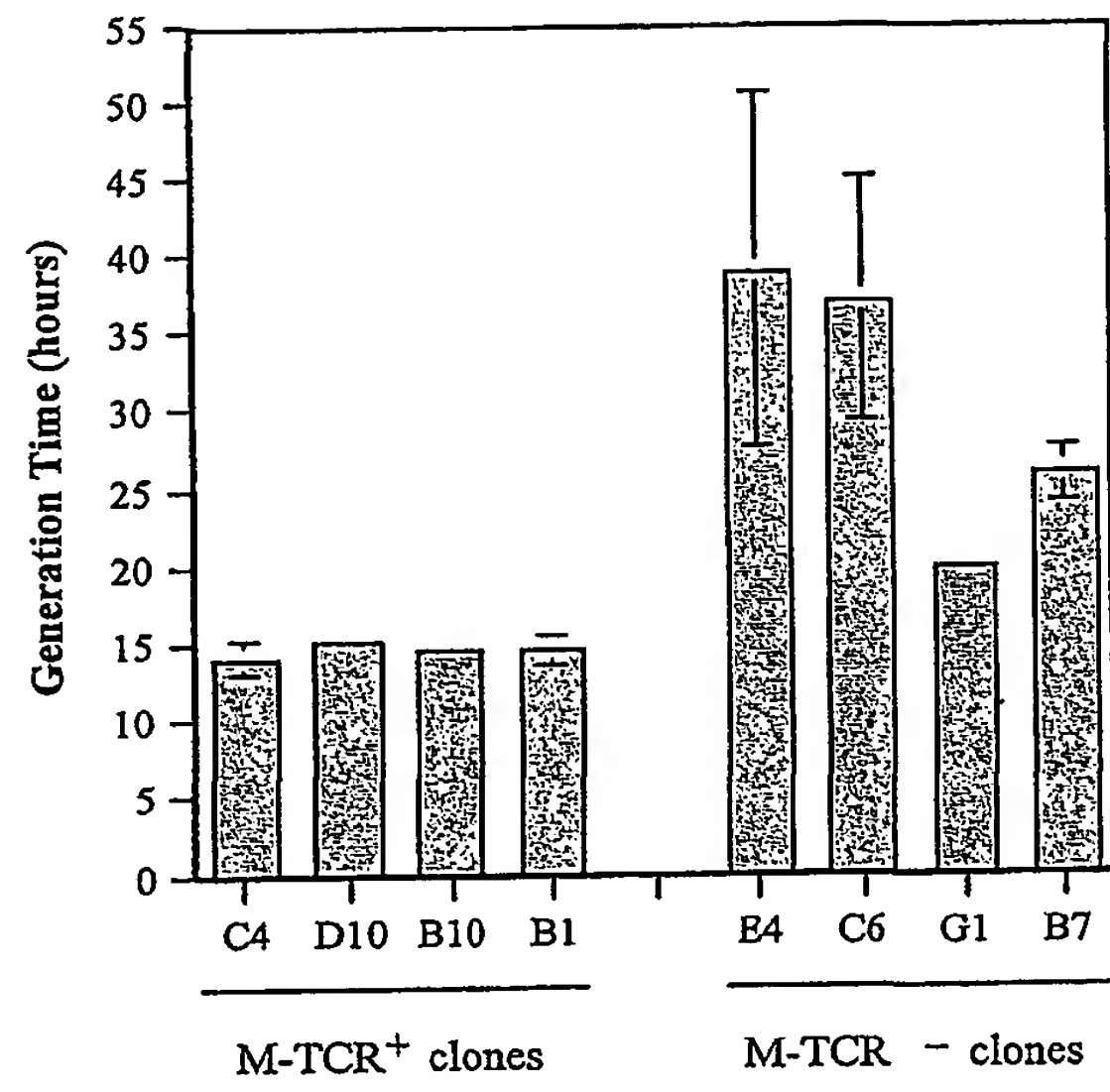


Figure 7

Figure 7A

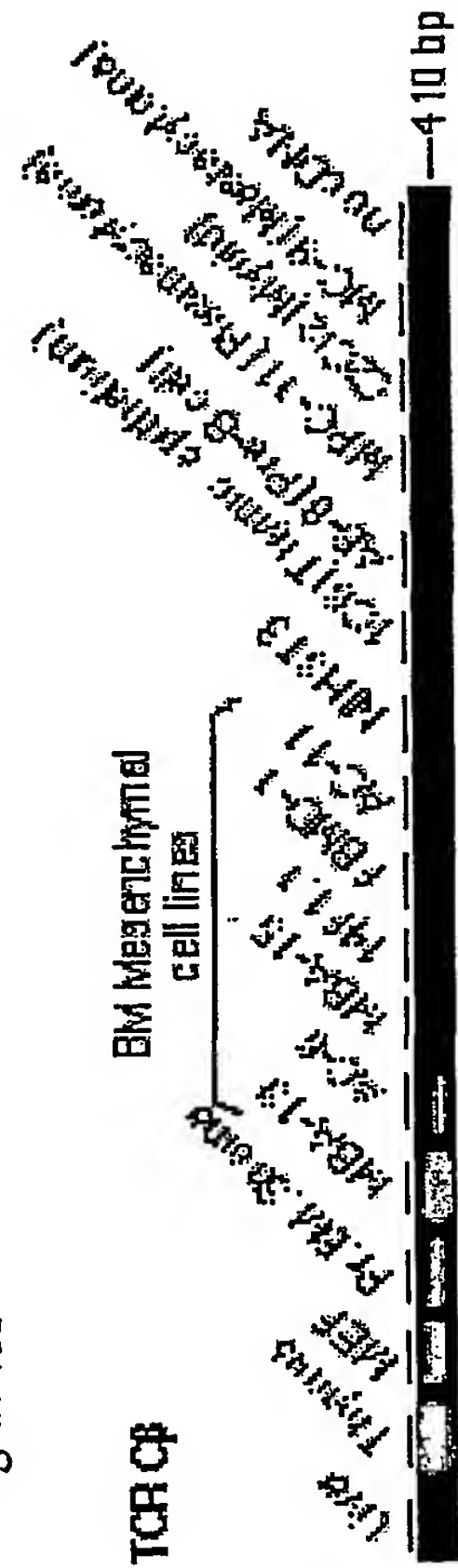
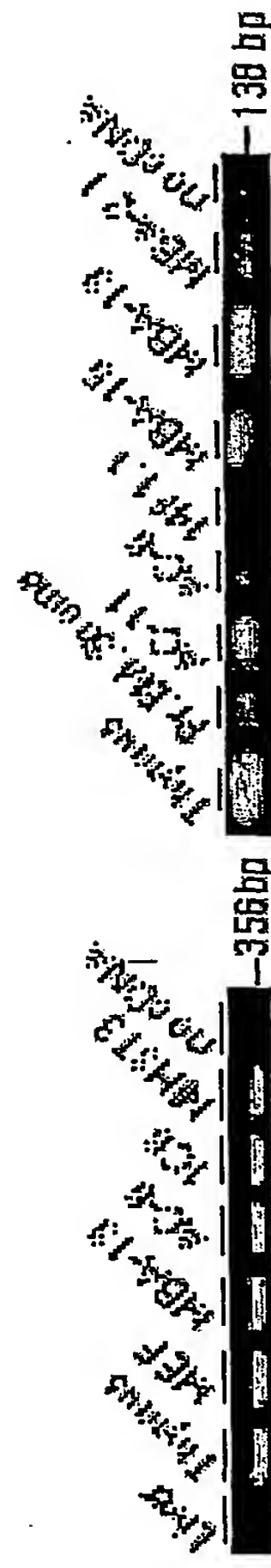


Figure 7C

Figure 7B

TCR Cα



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Figure 8

Figure 8A

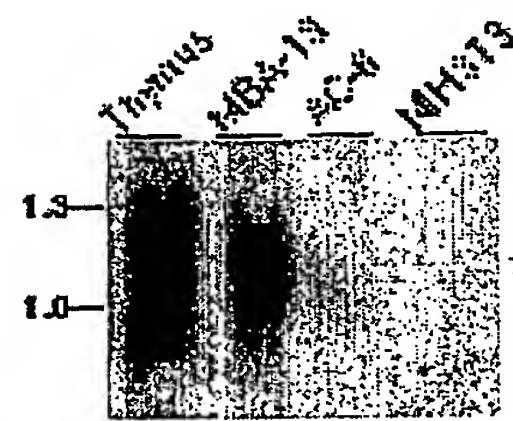


Figure 8B

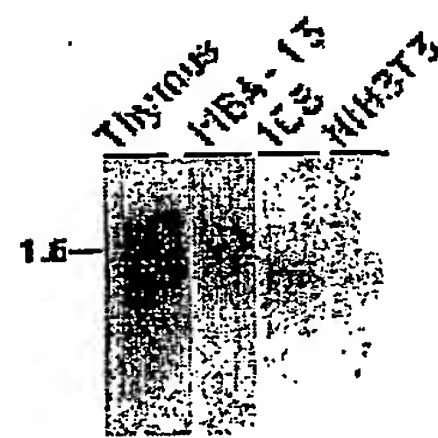
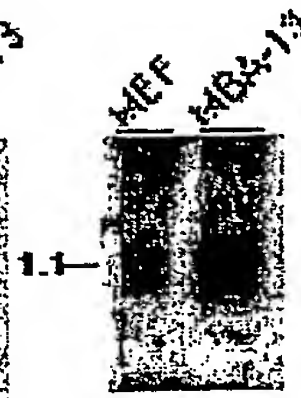


Figure 8C

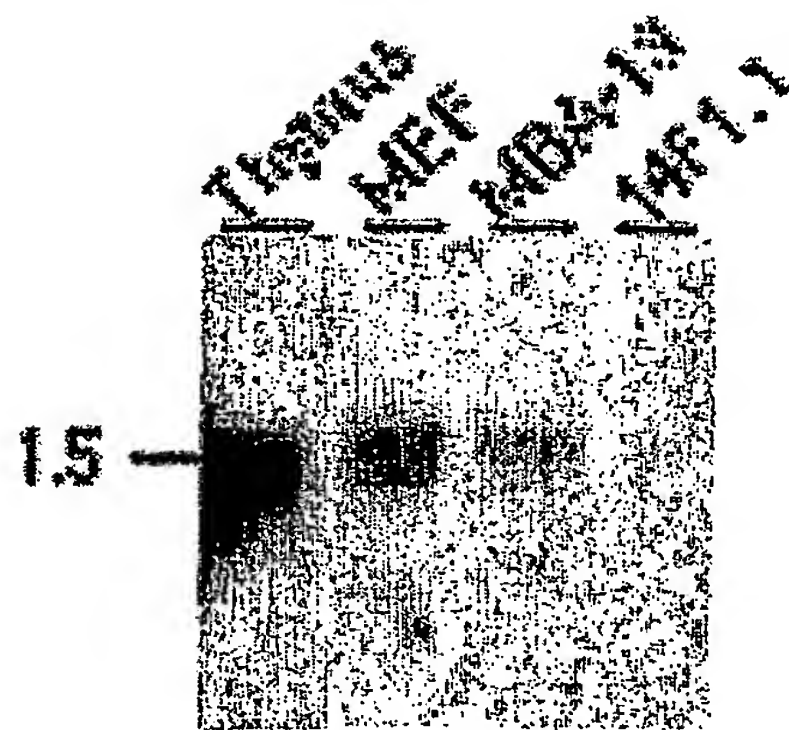
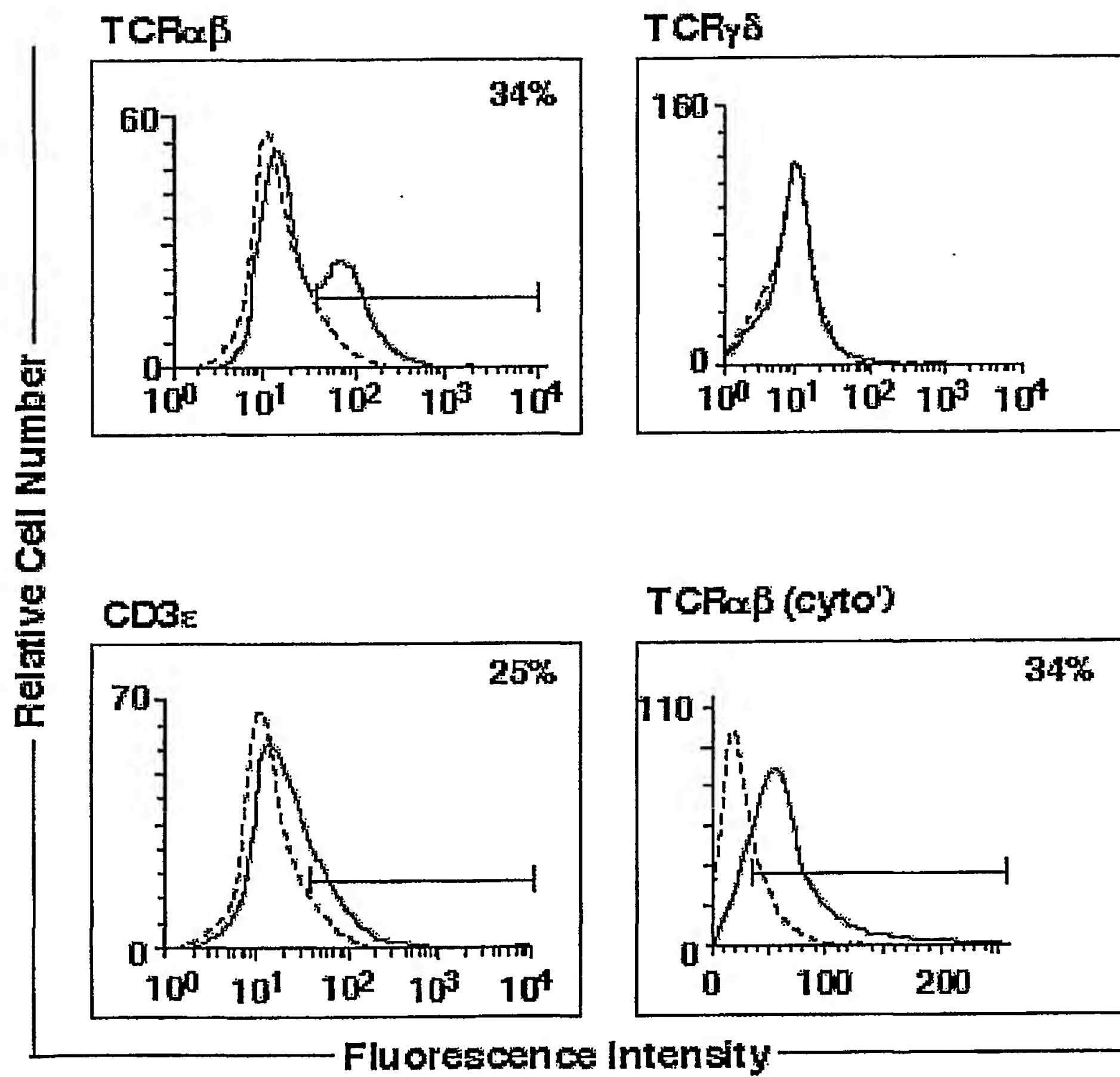


Figure 8D

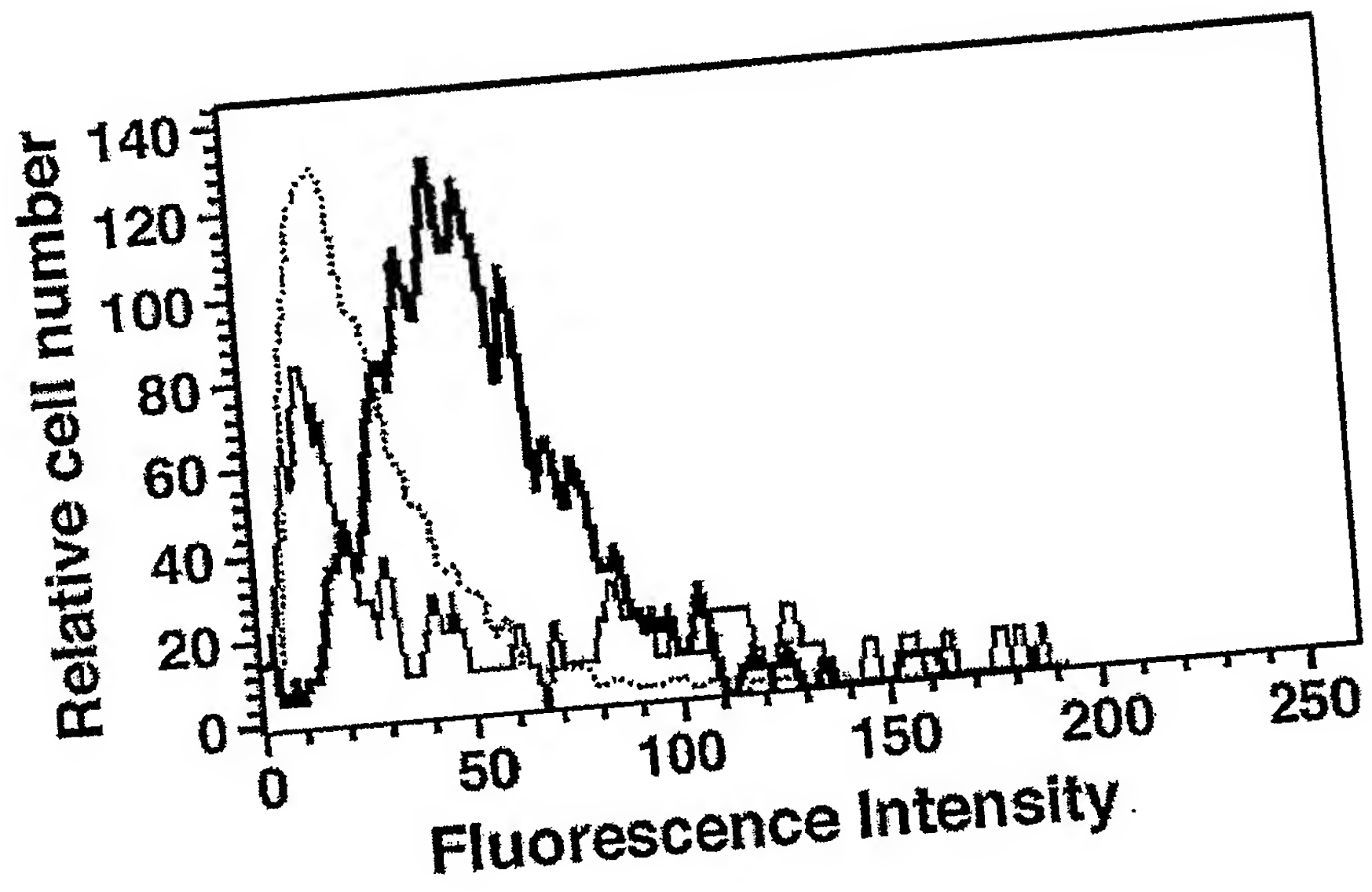
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Figure 9



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Figure 10



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Figure 11

Intron 5' to J β 2.3	J β 2.3	C β 2
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      Intron 5' to J $\beta$ 2.3
1 atggggctctcagcgggtgggaaggacccgagctgagtctgggacagcagagcgggcagca 60
1 H G I S A F G R T R A E S G T A E R A A 20
      J $\beta$ 2.3
61 ccgggtttttgtcctgggcctccaggctgtgagcacagatacgcagtatctttggcccaggc 120
21 P F F F I G I Q A F S T D T Q Y F G P G 40
      C $\beta$ 2
121 acccggctgacagtgctcaggacctgaaaaacgtgttccacccgaggtcgctgtgttt 180
41 T R L T V L E D L K N V F P P E V A V F 60

181 gagcatcagaagcagagctctccacaccccaaaaggccacactggtgtgcctggccaca 240
61 E P S E A E I S H T Q K A T L V C L A T 80

241 ggcttctaccccgaccacgtggagctgagctggtgggtgatgggaaggagggtgcacagt 300
81 G F Y P D H V E L S W W V N G K E V H S 100

301 ggggtcagcacagaccccgagccctcaaggagcagcccgccctcaatgactccagatac 360
101 G V S T D P Q P L K E Q P A L N D S R Y 120

361 tgcctgagcagccgcctgagggtctcggcaccttctggcagaaccccccgacaccccttc 420
121 C L S S R L R V S A T F W Q N P R N H F 140

421 cgtgtcaagtcacgttctacgggctctcggagantgacgagtggaaccaggatagggcc 480
141 R C Q V Q F Y G L S E N D E W T Q D R A 160

481 aaaccgctcaccagatcgtcagcgcggaggcctggggtagagcagactgtggcttcacc 540
161 K P V T Q I V S A E A W G R A D C G F T 180

541 tccgagtccttaccagcaggggtcctgtgtgcccacatcctctatgagatcttgctaggy 600
181 S E S Y Q Q G V L S A T I L Y E I L L G 200

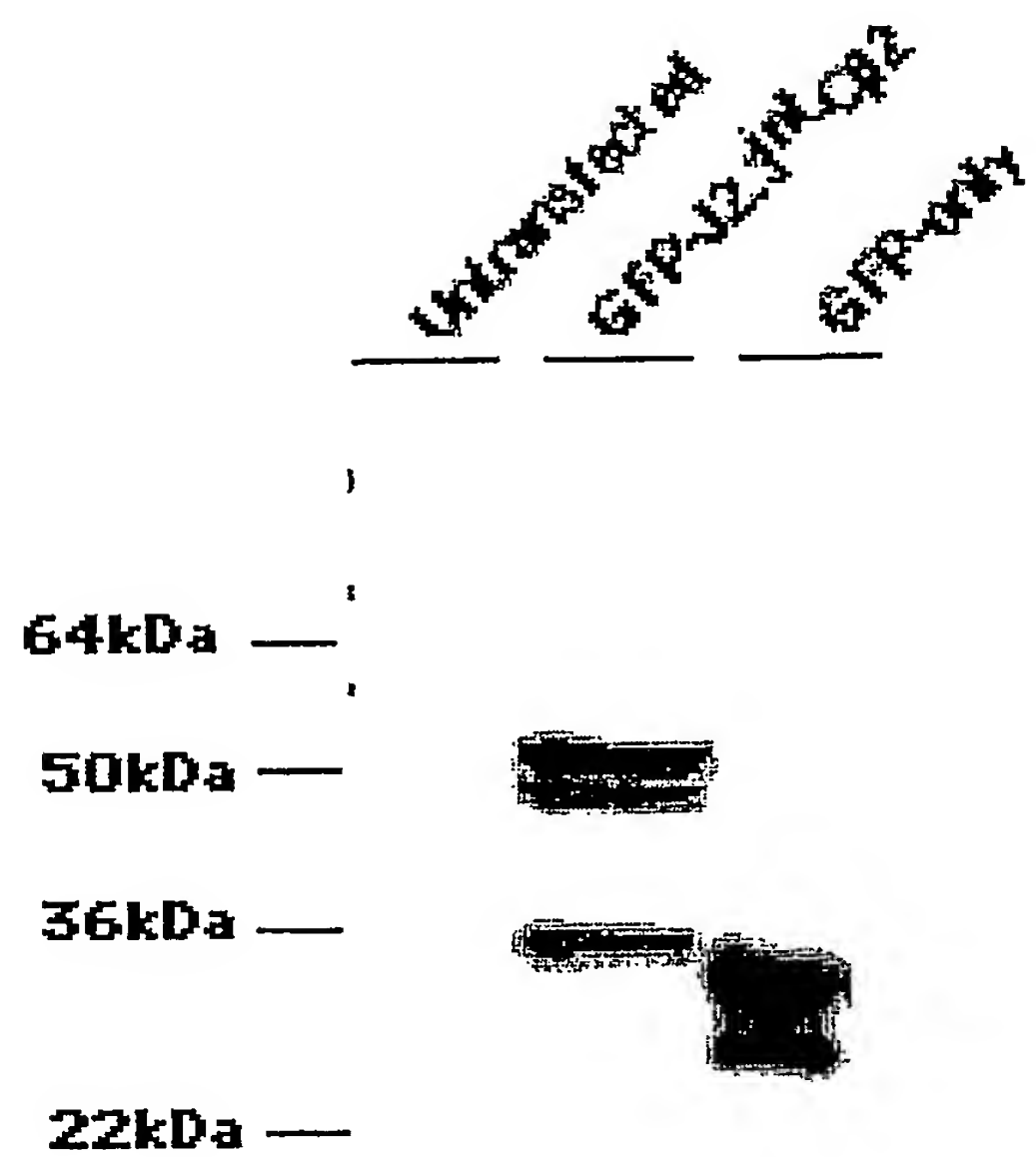
601 aaggccaccttgtatgcctgtctggtcagtgccctcgtgctgatggccatggtcaagaga 660
201 K A T L Y A V L V S A L V L M A M V K R 220

661 aaggattccagaggctag 678
221 K D S R G * 225

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Figure 12



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Figure 13

Figure 13A

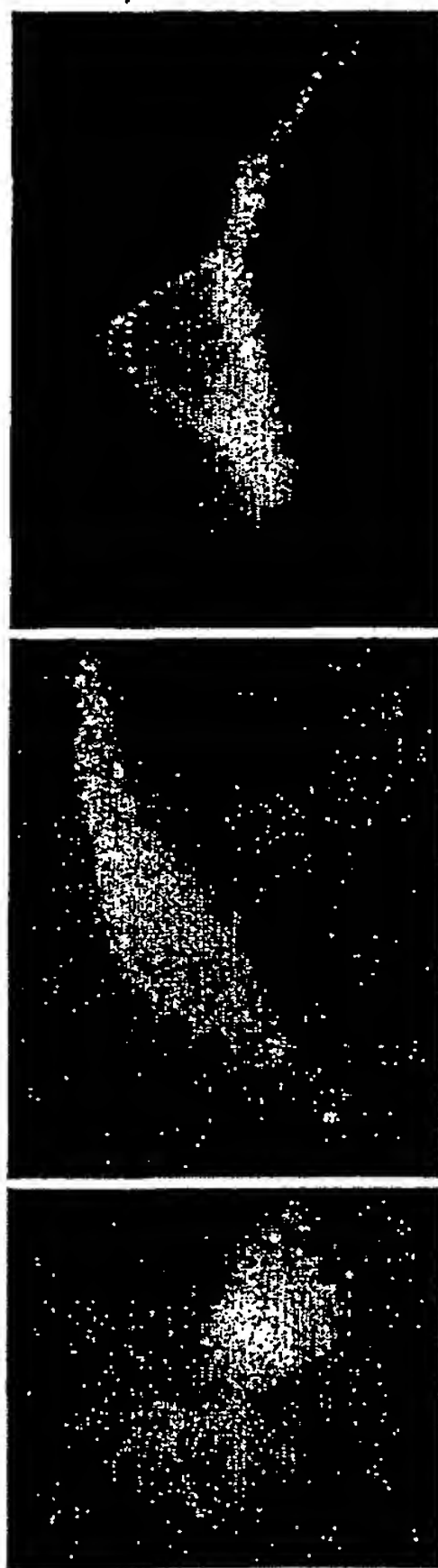


Figure 13B

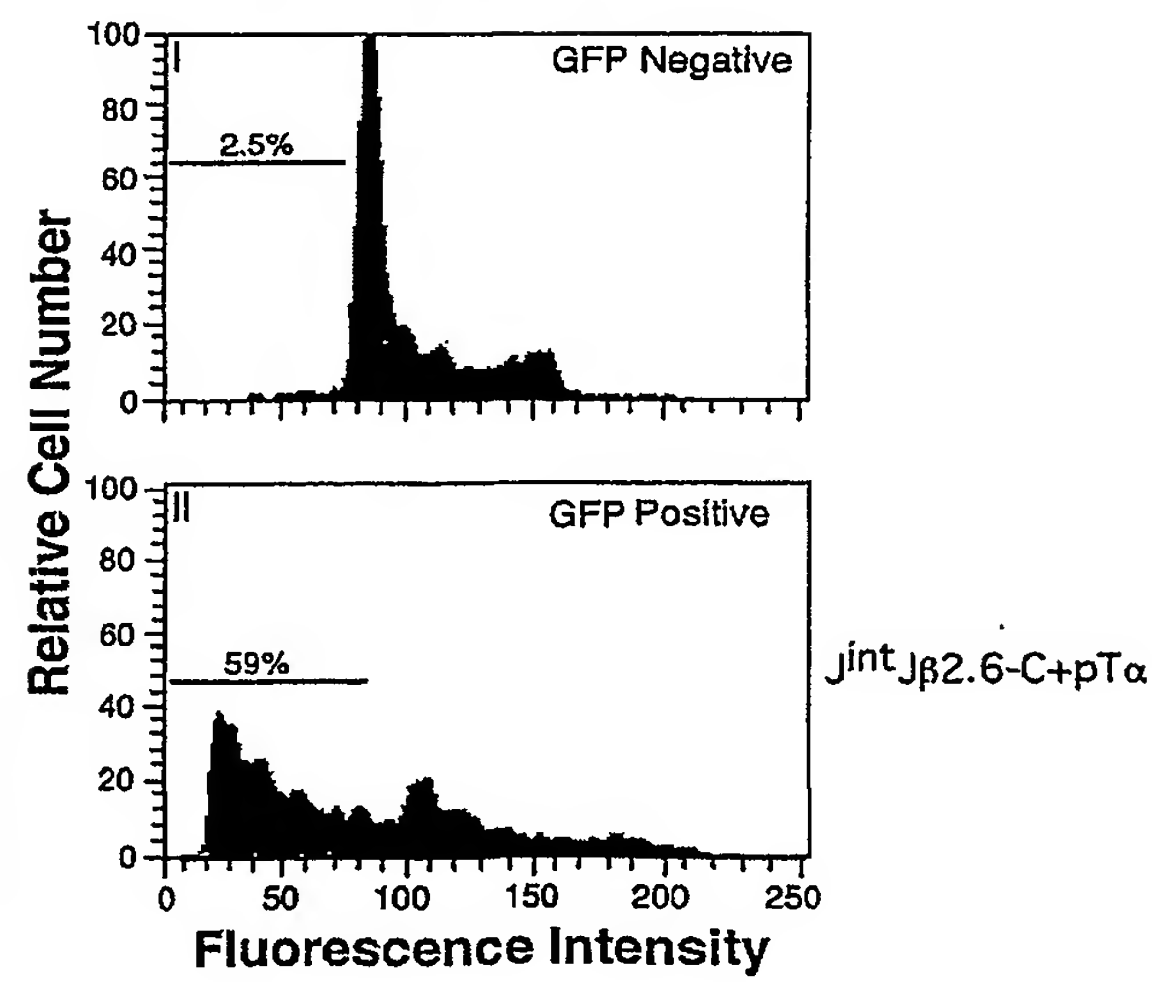
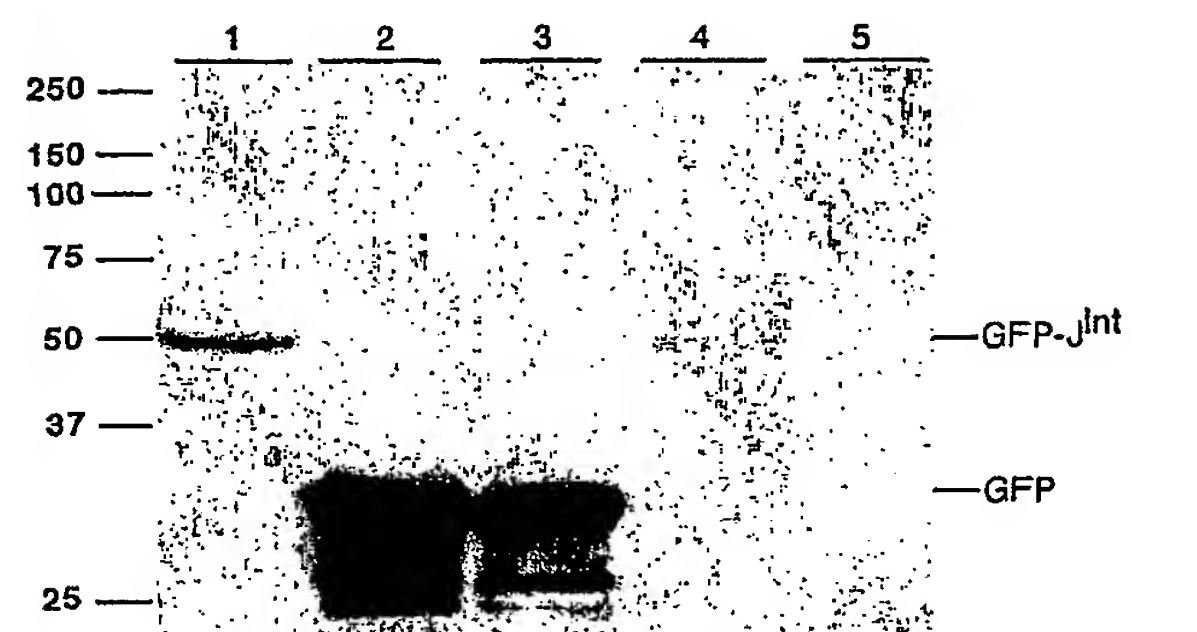


Figure 13C

Figure 14

